



SEQUENCE LISTING

7
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(1) GENERAL INFORMATION:

- (i) APPLICANT: SHEPARD, H. M.
KAN, NANCY
- (ii) TITLE OF INVENTION: GENE THERAPY BY RETROVIRAL VECTOR WITH
TUMOR SUPPRESSIVE GENE
- (iii) NUMBER OF SEQUENCES: 2
- (iv) CORRESPONDENCE ADDRESS:
 - (A) ADDRESSEE: TOWNSEND AND TOWNSEND AND CREW LLP
 - (B) STREET: TWO EMBARCADERO CENTER, 8TH FLOOR
 - (C) CITY: SAN FRANCISCO
 - (D) STATE: CA
 - (E) COUNTRY: U.S.A.
 - (F) ZIP: 94111-3834
- (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 08/403,797
 - (B) FILING DATE: 04-DEC-1995
 - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: PCT/US95/08844
 - (B) FILING DATE: 17-SEP-1993
- (viii) ATTORNEY/AGENT INFORMATION:
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 - (B) REGISTRATION NUMBER: 35,136
 - (C) REFERENCE/DOCKET NUMBER: 16930-000600
- (ix) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: (415) 326-2400
 - (B) TELEFAX: (415) 576-0300

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 7 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: not relevant
 - (D) TOPOLOGY: not relevant
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Ser His Arg Pro Gly Ser Arg
1 5

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 428 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: not relevant
- (D) TOPOLOGY: not relevant

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Gly | Ser | Gly | Asp | Thr | Leu | Arg | Ser | Gly | Trp | Glu | Arg | Ala | Phe |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| His | Asp | Gly | Asp | Thr | Leu | Pro | Trp | Ile | Gly | Ser | Gln | Thr | Ala | Phe | Arg |
| | 20 | | | | 25 | | | | | | | 30 | | | |
| Val | Thr | Ala | Met | Glu | Glu | Pro | Gln | Ser | Asp | Pro | Ser | Val | Glu | Pro | Pro |
| | 35 | | | | 40 | | | | | | | 45 | | | |
| Leu | Ser | Gln | Glu | Thr | Phe | Ser | Asp | Leu | Trp | Lys | Leu | Leu | Pro | Glu | Asn |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Asn | Val | Leu | Ser | Pro | Leu | Pro | Ser | Gln | Ala | Met | Asp | Asp | Leu | Met | Leu |
| | 65 | | | | 70 | | | | 75 | | | | 80 | | |
| Ser | Pro | Asp | Asp | Ile | Glu | Gln | Trp | Phe | Thr | Glu | Asp | Pro | Gly | Pro | Asp |
| | 85 | | | | 90 | | | | | | | 95 | | | |
| Glu | Ala | Pro | Arg | Met | Pro | Glu | Ala | Ala | Pro | Pro | Val | Ala | Pro | Ala | Pro |
| | 100 | | | | 105 | | | | 110 | | | | | | |
| Ala | Ala | Pro | Thr | Pro | Ala | Ala | Pro | Ala | Pro | Ser | Trp | Pro | Leu | | |
| | 115 | | | | 120 | | | | | | 125 | | | | |
| Ser | Ser | Ser | Val | Pro | Ser | Gln | Lys | Thr | Tyr | Gln | Ser | Tyr | Gly | Phe | |
| | 130 | | | | 135 | | | | | 140 | | | | | |
| Arg | Leu | Gly | Phe | Leu | His | Ser | Gly | Thr | Ala | Lys | Ser | Val | Thr | Cys | Thr |
| | 145 | | | | 150 | | | | 155 | | | | 160 | | |
| Tyr | Ser | Pro | Ala | Leu | Asn | Lys | Met | Phe | Cys | Gln | Leu | Ala | Lys | Thr | Cys |
| | 165 | | | | 170 | | | | | | | 175 | | | |
| Pro | Val | Gln | Leu | Trp | Val | Asp | Ser | Thr | Pro | Pro | Pro | Gly | Thr | Arg | Val |
| | 180 | | | | 185 | | | | 190 | | | | | | |
| Arg | Ala | Met | Ala | Ile | Tyr | Lys | Gln | Ser | Gln | His | Met | Thr | Glu | Val | Val |
| | 195 | | | | 200 | | | | | 205 | | | | | |
| Arg | Arg | Cys | Pro | His | His | Glu | Arg | Cys | Ser | Asp | Ser | Asp | Gly | Leu | Ala |
| | 210 | | | | 215 | | | | | | 220 | | | | |
| Pro | Pro | Gln | His | Leu | Ile | Arg | Val | Glu | Gly | Asn | Leu | Arg | Val | Glu | Tyr |
| | 225 | | | | 230 | | | | 235 | | | | 240 | | |
| Leu | Asp | Asp | Arg | Asn | Thr | Phe | Arg | His | Ser | Val | Val | Val | Pro | Tyr | Glu |
| | 245 | | | | 250 | | | | | | | 255 | | | |
| Pro | Pro | Glu | Val | Gly | Ser | Asp | Cys | Thr | Thr | Ile | His | Tyr | Asn | Tyr | Met |
| | 260 | | | | 265 | | | | | | 270 | | | | |

Cys Asn Ser Ser Cys Met Gly Gly Met Asn Arg Arg Pro Ile Leu Thr
275 280 285

Ile Ile Thr Leu Glu Asp Ser Ser Gly Asn Leu Leu Gly Arg Asn Ser
290 295 300

Phe Glu Val Arg Val Cys Ala Cys Pro Gly Arg Asp Arg Arg Thr Glu
305 310 315 320

Glu Glu Asn Leu Arg Lys Lys Gly Glu Pro His His Glu Leu Pro Pro
325 330 335

Gly Ser Thr Lys Arg Ala Leu Pro Asn Asn Thr Ser Ser Pro Gln
340 345 350

Pro Lys Lys Lys Pro Leu Asp Gly Glu Tyr Phe Thr Leu Gln Ile Arg
355 360 365

Gly Arg Glu Arg Phe Glu Met Phe Arg Glu Leu Asn Glu Ala Leu Glu
370 375 380

Leu Lys Asp Ala Gln Ala Gly Lys Glu Pro Gly Gly Ser Arg Ala His
385 390 395 400

Ser Ser His Leu Lys Ser Lys Lys Gly Gln Ser Thr Ser Arg His Lys
405 410 415

Lys Leu Met Phe Lys Thr Glu Gly Pro Asp Ser Asp
420 425